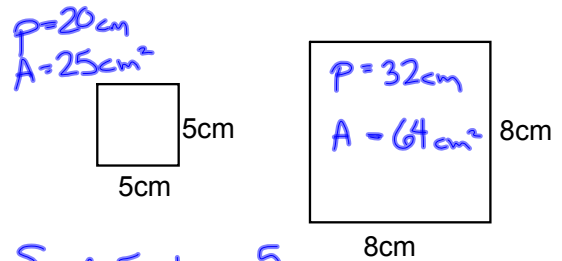


11.3 Perimeter and Area of Similar Figures



Scale Factor $\frac{5}{8}$
 Ratio of Perimeters $\frac{20}{32} = \frac{5}{8}$
 Ratio of Areas $\frac{25}{64}$ squaring scale factor

Theorem 11.7 Area of Similar Polygons

If 2 polygons are similar with the lengths of corresponding sides in the ratio of $a:b$, then the ratio of their areas is $a^2:b^2$.

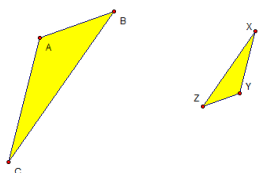
The scale factor of 2 similar rectangles is 9:5.

What is the ratio of the perimeters? $9:5$

What is the ratio of the areas? $81:25$

$$\frac{81}{25} = \frac{42}{A} \quad A = 13.0\text{cm}^2$$

If the area of the 1st rectangle is 42cm^2 , what is the area of the 2nd rectangle?



$$\triangle ABC \sim \triangle YZX$$

$$AC = 8\text{cm}$$

$$YX = ?$$

$$\text{Area } \triangle ABC = 32\text{ cm}^2$$

$$\text{Area } \triangle YZX = 8\text{ cm}^2$$

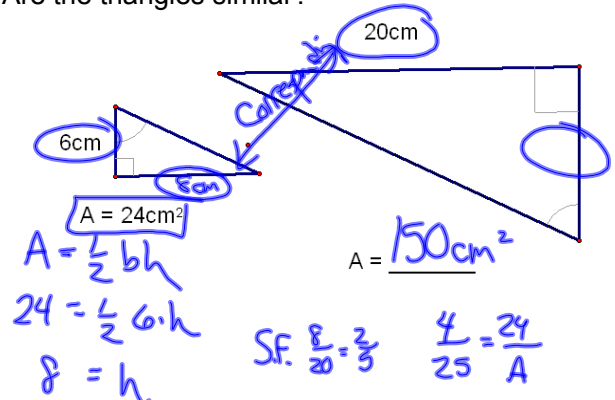
$$\frac{8}{YX} = \frac{2}{1}$$

$$YX = 4\text{cm}$$

$$RA \quad \frac{32}{8} = \sqrt{\frac{4}{1}}$$

$$S.F. = \frac{2}{1}$$

Are the triangles similar?



$$A = \frac{1}{2}bh$$

$$24 = \frac{1}{2} \cdot 6 \cdot h$$

$$8 = h$$

$$S.F. \quad \frac{8}{20} = \frac{2}{5} \quad \frac{4}{25} = \frac{24}{A}$$

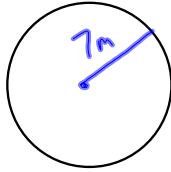
11.4 Circumference and Arc Length

$$C = 2\pi r$$

$$C = \pi \cdot d$$

$$C = 14\pi \text{ m (exact answer)}$$

$$\approx 44.0 \text{ m}$$

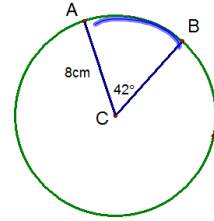


$$\text{Arc Length} = \frac{\text{Angle}}{360^\circ} \cdot 2\pi r$$

$$\widehat{AB} = \frac{42}{360} 16\pi$$

$$= \frac{28\pi}{15} \text{ cm}$$

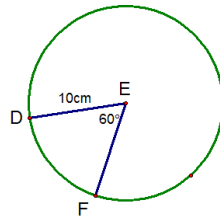
$$\approx 5.9 \text{ cm}$$



$$\text{Arc Length} = \frac{\text{Angle}}{360^\circ} \cdot 2\pi r$$

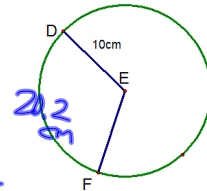
$$\widehat{DF} = \frac{10\pi}{3} \text{ cm}$$

$$\approx 10.5 \text{ cm}$$



$$\widehat{DF} = 20.2 \text{ cm}$$

$$m\widehat{DF} = \underline{\hspace{2cm}}$$



$$l = \frac{\text{angle}}{360} 2\pi r$$

$$^{360} (20.2 = \frac{x}{360} 20\pi)$$

$$\frac{7272}{(20\pi)} = x$$

$$115.7^\circ = x$$

HW

p740-741

#s 5-7, 13, 23

p750-751

#s 11, 12, 17-25